

## **REMARKS**

Upon entry of the present amendment, claims 1-2, 5-10, and 13-19 will remain pending in this application. Applicant respectfully submits that no new matter is added by the present amendment. For example, the matter added to claims 1, 9, and 17 is supported in the Specification at least at paragraphs [0019], [0024]-[0027] and Table 1.

Claims 1-2, 5-10, and 13-19 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 6,055,526 (“Ambroziak”) in view of U.S. Patent Application Publication No. 2003/0204513 (“Bumbulis”).

### ***Claim Rejections Under 35 U.S.C. § 103***

Claims 1-2, 5-10, and 13-19 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ambroziak in view of Bumbulis. As to claim 1, Applicant understands the rejection to be based on the premise that Ambroziak teaches a system for compression comprising a memory device that stores a plurality of compressed and uncompressed normalized index keys in sorted order, with no gaps between the stored normalized keys, and stores a plurality of slots with no gaps between the stored slots, as well as a processor that compresses the stored normalized keys. It is seen that the Examiner agrees with Applicant's position that Ambroziak is silent with respect to a b-tree data structure wherein each slot corresponds to a normalized index key in the memory page and comprises a memory offset of the corresponding key and an indicator if the corresponding normalized index key is compressed. Bumbulis is understood as having been cited as teaching a b-tree data structure in which each slot corresponds to a normalized index key in the memory page and comprises a memory offset of the corresponding key.

Applicant traverses the rejection. While Bumbulis discloses at paragraph [0068] that the “query tree is normalized by the normalizer 363,” Bumbulis states that normalization “includes, for example, the elimination of redundant data,” “error checking, such as confirming that table names and column names which appear in the query are valid,” and looking up “any referential integrity constraints which exist and [adding them] to the query.” See Bumbulis, paragraph [0068]. Accordingly, Applicant respectfully submits that the cited passage does not teach normalizing the index keys themselves, but rather normalizing a

query. Indeed, paragraph [0067] states that it is “the SQL statements received from the client(s) 310” that are processed by the engine, which includes the normalizer referred to in paragraph [0068]. While paragraph [0085] does state that “all keys can be normalized to binary strings in an order preserving fashion,” there is no disclosure as to how the keys are normalized. In particular, there is no disclosure that a key is normalized by “normalizing a plurality of column values that constitute the index key.”

By contrast, as stated in paragraph [0007] of the instant Specification, “a normalized key is a key that has been transformed to remove any difficulties related to the different types making up the key.” To this end, as recited in claim 1, each normalized index key is generated by normalizing the column values that constitute the (unnormalized) index key. In this way, “a normalized key may be compared with another normalized key without any instantiation of types or use of any type specific functions.” See paragraph [0007].

For at least these reasons, Applicant submits that Ambroziak and Bumbulis fail to disclose or suggest all of the limitations recited in claim 1, whether considered individually or in combination. Accordingly, claim 1 is patentable over Ambroziak in view of Bumbulis. Claims 2 and 5-8 depend from claim 1 and are therefore also patentable over Ambroziak in view of Bumbulis at least by reason of this dependency.

As to claim 9, Applicant understands the rejection to be based on similar premises to those advanced in connection with the rejection of claim 1. Accordingly, for the reasons discussed above in connection with claim 1, Applicant respectfully traverses the rejection and submits that claim 9 is patentable over Ambroziak in view of Bumbulis. Further, claim 9 recites limitations that are narrower than those found in claim 1 and is therefore further distinguished from Ambroziak and Bumbulis. For example, claim 9 recites that “each index key comprises a plurality of columns each having a column value and a column type and is normalized by normalizing each column value using a normalization function selected based on the column type and concatenating the normalized column values.” While Bumbulis states at paragraph [0085] that “all keys can be normalized to binary strings in an order preserving fashion,” there is no disclosure as to how the keys are normalized. In particular, there is no disclosure that a key is normalized “by normalizing each column value using a normalization function selected based on the column type and concatenating the normalized column values.”

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PROCEDURE PURSUANT TO  
37 CFR § 1.116**

Claims 10 and 13-16 depend from claim 9 and are also patentable over Ambroziak in view of Bumbulis at least by reason of this dependency.

Claim 17 recites similar limitations relating to how the index keys are normalized. Accordingly, the above reasoning in connection with claim 9 applies with equal force to claim 17. Applicant therefore submits that claim 17 is patentable over Ambroziak in view of Bumbulis. Claims 18-19 depend from claim 17 and are therefore also patentable over Ambroziak in view of Bumbulis.

Accordingly, Ambroziak and Bumbulis fail to disclose, whether considered individually or in combination, all of the elements of the currently pending claims. Applicant respectfully requests that the outstanding rejections under 35 U.S.C. § 103(a) be reconsidered and removed.

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**CONCLUSION**

In view of the above amendments and remarks, Applicant respectfully submits that the present application is in condition for allowance. Reconsideration of the application is respectfully requested.

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